MTP 15HD RS Series

MINI TWISTED PAIR TRANSMITTERS AND RECEIVERS FOR VGA AND RS-232

- **Sends high resolution video and RS-232 signals over a single CAT 5-type cable**
- **Receiver models for 600 foot and 1,500 foot transmission**
- **Multiple form factors for a variety of installation environments**
- **Supports RGBHV, RGBS, RGsB, RsGsBs, component video, S-video, and composite video**
- **Compatible with HDTV component video, bi-level or tri-level sync**
- **Models available for use with CAT 7 STP cable**

The Extron MTP 15HD RS Series are economical, compact Mini Twisted Pair transmitters and receivers for simultaneously sending high resolution computer-video and RS-232 serial control signals over a single CAT 5-type cable. They are available in several versions and form factors to match the needs of various installation environments.

DESCRIPTION

The Extron **MTP 15HD RS** Series is a versatile family of mini twisted pair transmitters and receivers for sending high resolution computer-video and RS-232 serial control signals long distances over a single twisted pair cable. The series has three transmitter models and seven receiver models. All models are compatible with resolutions up to 1920x1200 WUXGA and support cable runs of 600 feet (185 meters) or more with XGA signals, and 450 feet (135 meters) or more with UXGA signals.

Extended Distance Receivers
For A/V systems with a need to transmit signals even longer distances, two receiver models, the MTP 1500RL 15HD RS and the MTP 1500RL 15HD RS SEQ, receive high resolution video and RS-232 signals 1,500 feet (450 meters) or more over a single CAT 5-type cable.

Buffered Loop-Through
All RL receiver models feature an additional female RJ-45 buffered output, enabling up to eight receivers to be connected in series, reducing the number of parallel cable runs required. Each receiver model also offers separate continuously variable level and peaking adjustments that precisely optimize image quality for various cable lengths.

Integrated Skew Equalization
SEQ receiver models feature an integrated skew equalizer to correct the color misalignment present in twisted pair A/V systems using Category 5, 5e, 6, or 7 cable. Skew is created when the red, green, and blue video signals arrive at the display at different times; see Figure 1. Using Extron's skew equalizer technology, the arrival of color signals is synchronized, improving image quality while maintaining full signal integrity; see Figure 2.

A Complete Twisted Pair Solution
These transmitters and receivers are part of the larger, comprehensive MTP Series of twisted pair products. They can be used for simple point-to-point applications or in combination with other twisted pair products, including switchers, distribution amplifier, and matrix switchers, to create more complex A/V systems with multiple inputs and outputs. The Extron MTP Series provides integrators and system designers with the most complete twisted pair product offering in the industry.

FEATURES

- **Sends high resolution video and RS-232 signals over a single CAT 5-type cable**
- **Receiver models for 600 foot (185 meters) and 1,500 foot (450 meters) transmission**
- **Multiple form factors for a variety of installation environments**
- **Supports RGBHV, RGBS, RGsB, RsGsBs, component video, S-video, and composite video**
- **Compatible with HDTV component video, bi-level or tri-level sync**
- **Models available for use with CAT 7 STP cable**
- **Versatile mounting options**
- **External international power supply included**

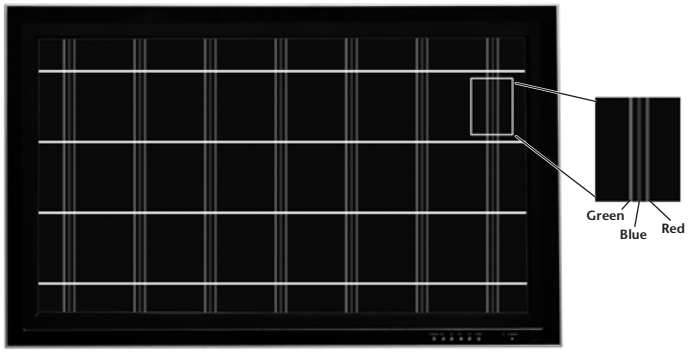


Figure 1
Green and Blue video signals are arriving before the Red signal requiring skew delay equalization

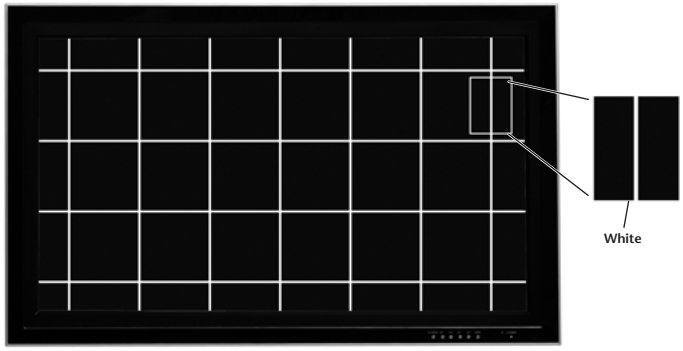


Figure 2
All video signals are now properly aligned as a result of using skew delay equalization

MTP 15HD RS Models

Model	Form Factor	Pre-Peaking	Level & Peaking Controls	Buffered UTP Loop Output	Skew Delay Equalizer	Use with CAT 7 Only
Transmitters						
MTP T 15HD RS	1/4 Rack	✓				
MTP 4T 15HD RS	Full Rack	✓				
MTP C7 T 15HD RS	1/4 Rack	✓				✓
Receivers						
MTP RL 15HD RS	1/4 Rack		✓	✓		
MTP C7 RL 15HD RS	1/4 Rack		✓	✓		✓
MTP RL 15HD RS SEQ	1/4 Rack		✓	✓	✓	
MTP C7 RL 15HD RS SEQ	1/4 Rack		✓	✓	✓	✓
MTP 1500RL 15HD RS	Low Profile		✓	✓		
MTP 1500RL 15HD RS SEQ	Low Profile		✓	✓		
MTP R 15HD RSA D	Decora		✓			

MTP 15HD RS SERIES TRANSMITTERS

The Extron **MTP T 15HD RS** Series transmitters send high resolution video and RS-232 signals long distances to a compatible MTP receiver over a single CAT 5-type twisted pair cable.

COMMON FEATURES:
- Compatible with high resolution video up to 1920x1200, including HDTV
- Pre-peaking circuit for optimizing video signal on long cable runs
- Buffered local monitor output
- LED power indicator on front panel

MTP T 15HD RS
Mini Twisted Pair Transmitter for VGA and RS-232

UNIQUE FEATURES
- Input: Female 15-pin HD connector for video and captive screw connector for RS-232
- Output: Female RJ-45 connector
- Rack-mountable, 1U, quarter rack width metal enclosure
- MTP C7 T 15HD RS model is for use with CAT 7 cable only and requires C7 receiver

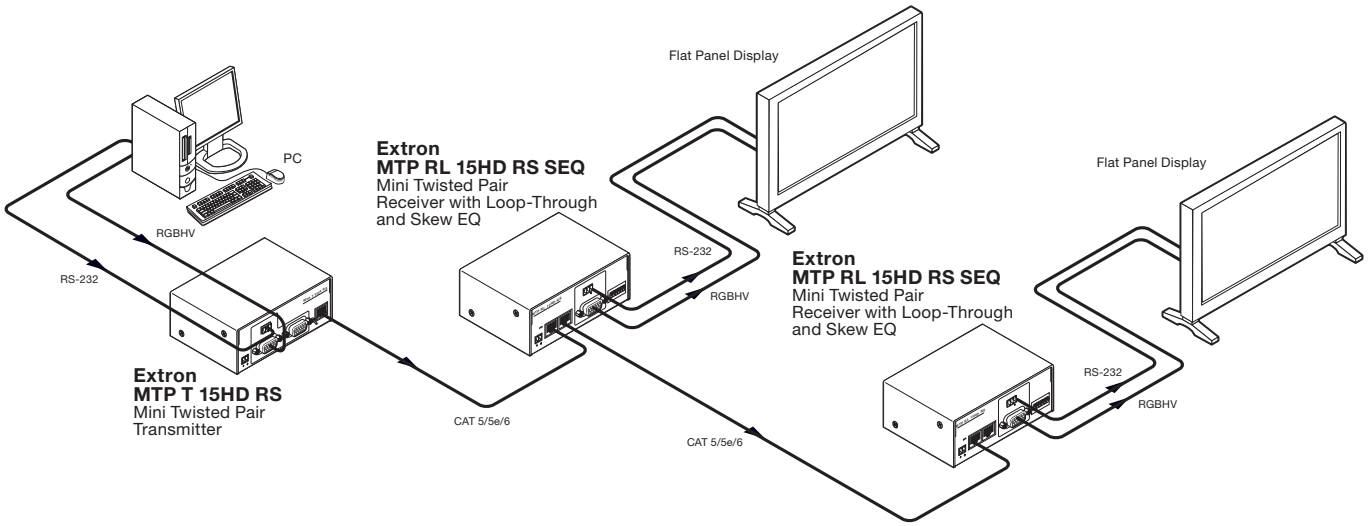
Model	Version Description	Part Number
MTP T 15HD RS	Transmitter	60-652-01
MTP C7 T 15HD RS	CAT 7 transmitter	60-652-02

MTP 4T 15HD RS
Quad Mini Twisted Pair Transmitter for VGA and RS-232

UNIQUE FEATURES
- Four separate transmitters in a single 1U, rack-mountable enclosure
- Input: Four female 15-pin HD connectors for video and four captive screw connectors for RS-232
- Output: Four female RJ-45 connectors
- Four buffered local monitor outputs one for each transmitter
- Internal international power supply

Model	Version Description	Part Number
MTP 4T 15HD RS	Quad Transmitter	60-905-01

APPLICATION DIAGRAM



MTP 15HD RS SERIES RECEIVERS

The **MTP15HD RS** Series receivers accept proprietary signals from any MTP 15HD RS Series transmitter. These receivers are compact so they can fit just about anywhere. Available in various architectural form factors for blending into the surrounding environment, while providing easy connector access.

COMMON FEATURES

- Receives high resolution video and RS-232 signals over a single CAT 5-type cable
- Compatible with high resolution video up to 1920x1200, including HDTV
- Separate continuously variable level and peaking controls
- Buffered RJ-45 loop-through for daisy-chaining up to eight receivers - RL models only

NOTE: Universal receivers are also available. See MTP U Series on www.extron.com

MTP RL 15HD RS

Mini Twisted Pair Receiver for VGA and RS-232

UNIQUE FEATURES

- Input: Female RJ-45 connector and female RJ-45 connector for buffered loop-through
- Output: Female 15-pin HD connector for video and captive screw connector for RS-232
- Supports cable runs of 600 feet or more with XGA signals and 450 feet or more with UXGA signals
- Rack-mountable, 1U, quarter rack width metal enclosure
- MTP C7 RL 15HD RS model is for use with CAT 7 cable only and requires C7 transmitter

Model	Version Description	Part Number
MTP RL 15HD RS	Receiver	60-735-01
MTP C7 RL 15HD RS	CAT 7 Receiver	60-735-03

MTP RL 15HD RS SEQ

Mini Twisted Pair Receiver for VGA and RS-232 with Skew Equalization

UNIQUE FEATURES

- Input: Female RJ-45 connector and female RJ-45 connector for buffered loop-through
- Output: Female 15-pin HD connector for video and captive screw connector for RS-232
- Supports cable runs of 600 feet or more with XGA signals and 450 feet or more with UXGA signals
- Independent skew compensation adjustments for each color
- Rack-mountable, 1U, quarter rack width metal enclosure
- MTP C7 RL 15HD RS SEQ model is for use with CAT 7 cable only and requires C7 transmitter

Model	Version Description	Part Number
MTP RL 15HD RS SEQ	Receiver w/ Skew EQ	60-735-02
MTP C7 RL 15HD RS SEQ	CAT 7 Receiver w/ Skew EQ	60-735-04

MTP 1500RL 15HD RS

Extended Distance Mini Twisted Pair Receiver for VGA and RS-232

UNIQUE FEATURES

- Receives high resolution video and RS-232 signals 1,500 feet or more
- Input: Female RJ-45 connector and female RJ-45 connector for buffered loop-through
- Output: Female 15-pin HD connector for video and captive screw connector for RS-232
- Low profile enclosure, discreetly mounts behind wall mounted display

Model	Version Description	Part Number
MTP 1500RL 15HD RS	Receiver	60-960-01

MTP 1500RL 15HD RS SEQ

Extended Distance Mini Twisted Pair Receiver for VGA and RS-232 with Skew Equalization

UNIQUE FEATURES

- Receives high resolution video and RS-232 signals 1,500 feet or more
- Input: Female RJ-45 connector and female RJ-45 connector for buffered loop-through
- Output: Female 15-pin HD connector for video and captive screw connector for RS-232
- Independent skew compensation adjustments for each color
- Low profile enclosure, discreetly mounts behind wall mounted display

Model	Version Description	Part Number
MTP 1500RL 15HD RS SEQ	Receiver w/ Skew EQ	60-960-02

MTP R 15HD RSA D

Mini Twisted Pair Receiver for VGA, Audio, and RS-232 - Decora® Wallplate

UNIQUE FEATURES

- Input: Female RJ-45 connector
- Output: Female 15-pin HD connector for video and captive screw connectors for RS-232 and audio
- Supports cable runs of 600 feet or more with XGA signals and 450 feet or more with UXGA signals
- Automatic detection and routing of audio and RS-232 signals to the appropriate output
- Mounts in an included Decora®-style wallplate

Model	Version Description	Part Number
MTP R 15HD RSA D	Receiver - Decora	60-929-01

SPECIFICATIONS

VIDEO

Gain	Unity
Signal type	proprietary analog signals
Connectors	
All models	female RJ-45

VIDEO INPUT AND LOOP THROUGH — TRANSMITTERS

Number/signal type	1 analog RGBHV, RGBS, RGsB, RsGsBs, component video (with bi-level or tri-level sync), S-video, or composite video 1 buffered RGBHV, RGBS, RGsB, RsGsBs local monitor loop through (includes ID bits)
Connectors	2 female 15-pin HD
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB and for R-Y and B-Y of component video 0.3 Vp-p for C of S-video
Minimum/maximum levels	0.3 V to 1.45 Vp-p
Impedance	75 ohms
Horizontal frequency	15 kHz to 130 kHz
Vertical frequency	30 Hz to 150 Hz
Return loss	<-30 dB @ 5 MHz
DC offset (max. allowable)	250 mV

VIDEO OUTPUT — RECEIVERS

Number/signal type	
MTP R 15HD RSA D	1 analog VGA-UXGA RGBHV, RGBS, RGsB, RsGsBs, HD component video, component video, S-video, or composite video
All other receivers	1 set of proprietary analog signals 1 analog RGBHV, RGBS, RGsB, RsGsBs, component video, S-video, or composite video
Connectors	
MTP R 15HD RSA D	1 female 15-pin HD
All other receivers	1 female RJ-45 1 female 15-pin HD
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB and for R-Y and B-Y of component video 0.3 Vp-p for C of S-video
Minimum/maximum levels	0.3 V to 1.45 Vp-p
Impedance	75 ohms
Return loss	<-30 dB @ 5 MHz
DC offset	
MTP 1500RL 15HD Series	<±35 mV with input at 0 offset
All other receivers	<±20 mV with input at 0 offset

SYNC

Input type (transmitter)	RGBHV, RGBS, RGsB, RsGsBs, bi-level or tri-level for component video
Output type (receivers)	RGBHV, RGBS, RGsB, RsGsBs
Standards	NTSC 3.58, NTSC 4.43, PAL, SECAM
Input level (transmitter)	3.5 V to 5.5 Vp-p, unterminated
Output level (receivers)	0.3 Vp-p for component video (bi-level sync) 0.6 Vp-p for component video (tri-level sync) TTL: 4.0 V to 5.0 V p-p, unterminated for RGBHV, RGBS

AUDIO — MTP R 15HD RSA D

Number/signal type	1 set of proprietary analog signals from an MTP transmitter
Connector	1 female RJ-45
Gain	Unbalanced output: 0 dB; balanced output: +6 dB
Frequency response	20 Hz to 20 kHz, ±1 dB
THD + Noise	0.15% @ 1 kHz, 0.3% @ 20 kHz at nominal level
S/N	>70 dB at maximum output (unweighted)
CMRR	>43 dB @ 20 Hz to 20 kHz

AUDIO OUTPUT — MTP R 15HD RSA D

Number/signal type	1 mono, balanced/unbalanced
Connector	(1) 3.5 mm captive screw connector, 5 pole

CONTROL/REMOTE — external device (pass-through, unidirectional or bidirectional)

Serial control port input/output	
Transmitters	RS-232 via (1) 3.5 mm, 5 pole captive screw connector
Receivers	1 set of proprietary signals on a female RJ-45 jack
Serial control port output/input	
Transmitters	1 set of proprietary signals on a female RJ-45 jack
MTP R 15HD RSA D	RS-232 via 3 poles of a 3.5 mm captive screw connector, 5 pole
All other receivers	RS-232 via (1) 3.5 mm, 3 pole captive screw connector
Baud rates	Up to 38400 bps
Protocol	Data bits = 5 - 8 Stop bits = 1 or 2 Parity = odd, even, none Flow control = XON, XOFF, none

GENERAL

Power (MTP 4T 15HD RS)	100 VAC to 240 VAC, 50/60 Hz, 20 watts, internal
External power supply (all other models)	100 VAC to 240 VAC, 50/60 Hz, external; to 12 VDC, 2 A, regulated
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Product weight	
MTP 4T 15HD RS	6.0 lbs (2.7 kg)
MTP 1500RL 15HD Series	2.5 lbs (1.1 kg)
MTP R 15HD RSA D, MTP T/R 15HD RS, MTP R 15HD RS SEQ, MTP T/R C7 15HD Series	0.4 lbs (0.2 kg)
Shipping weight	
MTP 4T 15HD RS	10 lbs (5 kg)
MTP 1500RL 15HD Series	5 lbs (3 kg)
MTP R 15HD RSA D, MTP T/R 15HD RS, MTP R 15HD RS SEQ, MTP T/R C7 15HD Series	2 lbs (1 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliances	
Safety	CE, C-tick, CUL, UL
EMI/EMF	CE, C-tick, FCC Class A, ICES, VCCI
MTBF	30,000 hours
Warranty	3 years parts and labor

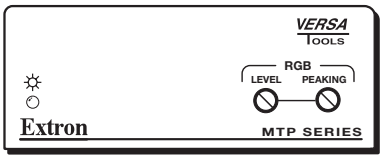
NOTE: All nominal levels are at ±10%.

***** For complete product specification see Extron.com

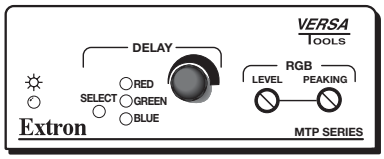
Specifications are subject to change without notice.

PANEL DRAWINGS

MTP T 15HD RS - Front



MTP RL 15HD RS - Front



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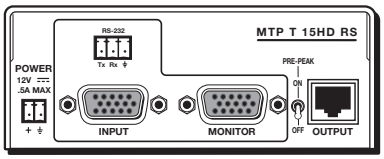

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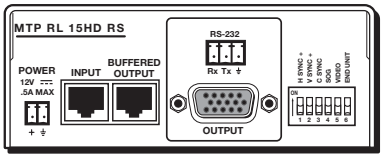

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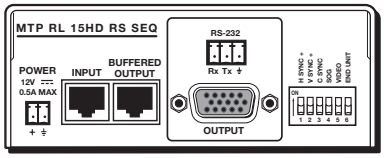
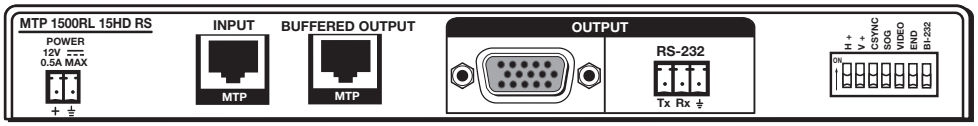


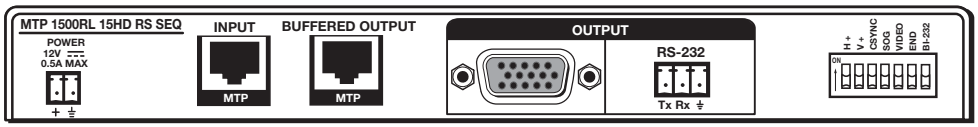
MTP RL 15HD RS SEQ - Back

MTP 1500RL 15HD RS - Front



MTP 1500RL 15HD RS - Back

MTP 1500RL 15HD RS SEQ - Front



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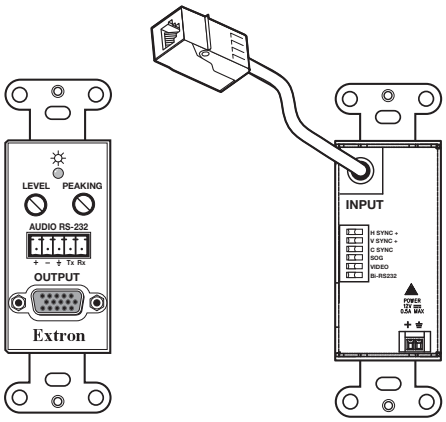

MTP R 15HD RSA D
Front

MTP R 15HD RSA D
Back

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